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FOOTWEAR

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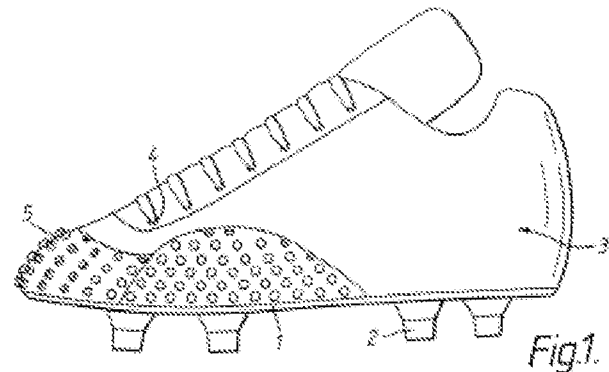
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Abstract not available for AU2572792

Abstract of corresponding document: **GB2259639**

An article of footwear eg a football boot is characterised by having at least one region/zone (5) at which frictional interaction during contact between a ball and a said region/zone is enhanced. Each said region/zone is such that the reaction between a said zone and a ball on impact between the ball and the zone is such as to facilitate the production of a relative movement between the article of footwear and ball which is such as to cause the ball to follow a desired linear/curved trajectory. The region may have protrusions or recesses which may be regularly or randomly arranged. The regions may be formed during manufacture or a panel may be attached to an existing boot.



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Description of corresponding document: **GB2259639**

## FOOTWEAR

This invention relates to footwear and more particularly but not exclusively to sports footwear.

There are many forms of footwear for use in sporting activities such as, for example, the game of football which as the name suggests involves the propelling of a football by use of the player's feet. In practice, the player frequently needs not only to be able to kick a ball in a required direction and with the object of achieving a target but additionally to be able to control/impart a particular form of flight to the ball. For example, it may be required to project the ball as quickly as possible along a rectilinear path without any deviation; it may be desired to kick the ball such that it follows a low dipping trajectory; or it may be desired to kick the ball high and along a curved path. In each case it is often desired to control the flight of the ball whether or not the ball deviates or curls whilst in the air away from a purely rectilinear path.

In addition, it is an important requirement for footballers to be able to run whilst at the same time manoeuvring (dribbling) the ball with a view to misleading an opponent as to the instantaneous location of the ball or to conceal where to and when it is intended to kick the ball.

In relation to all of the above possibilities and, of course, many more not specifically mentioned the basic requirement is for the player to be able to exert control over the ball at the time of kicking to such an extent that the player is able to impart spin or other forms of induced movement into the ball so as selectively to vary the flight of the ball as a contrast to the simple kicking ahead of the ball.

The presently known forms of football boot construction do not contribute to any ability a player may have to be able to impart such control over the flight of the ball which control involves skills which are not common to all players of football and especially young persons.

It has been realised that the present construction of a football boot does not always provide any particular assistance in ball control and, in practice, for many players the actual construction of a football boot does not specifically aid the development of player skills in the arts of ball control.

In many instances in relation to ball control it is very important to be able to strike a ball with a requisite blend of different aspects of ball control such as kicking power; kicking direction in relation to the desired direction in which it is required to project the ball; selecting the particular location of the boot that the player intends should actually strike the ball; the production of relative displacement movement between the player's boot and the surface of the ball at the moment of impact; with the aggregate intention that the resultant of the various forces imposed upon the ball leads to a combination of travel in a particular direction accompanied by an imposed spin which causes the ball to swerve and follow a desired curved or otherwise trajectory.

The Applicant has appreciated that; an important factor in the achievement of effective ball control is the need to be able to impart controlled spin to the ball.

It is thus an -object of the present invention to provide means which at least assists in enhancing a player's ability to perform a requisite standard of ball control.

Broadly, according to a first aspect of the invention there is provided a method of enabling friction between an article of footwear and a ball is enhanced characterised by the step of applying to or producing on the article of footwear at least one region/zone of enhanced friction capability.

Broadly, according to a further aspect of the invention, there is provided an article of footwear having at least one region/zone at which frictional interaction during contact between a ball and a said region/zone is enhanced.

In other words the Applicant has appreciated that at the time of impact between a boot and the ball; a major factor in such creation is the nature of the boot surface presented to the ball at the time of impact; and that the construction of the presently used football boot militates against ball control and ball spin production as above considered.

Conveniently, each said region/zone is such that the reaction between a said region/zone and a ball on impact between the ball and the region/zone is such as to facilitate the production of a relative movement between boot and ball which is such as to cause the ball to follow a curved trajectory.

Preferably, each said region/zone is such that at each such region/zone the surface of the boot is arranged to produce additional grip between the ball and the surface of the boot at a said region/zone whereby any relative displacement between the ball and footwear/boot surface whilst contact is occurring therebetween facilitates imparting spin to the ball.

Preferably, a said predetermined region/zone of an article of footwear such as a boot incorporates a plurality of raised elements, pips, dots, or otherwise raised or roughened surface characteristics.

Conveniently, at least one of the regions/zones can include plurality of recessed locations defined by recesses, grooves, hollows or the like arranged such that the open ends of the walls recesses, grooves, hollows or the like provide the friction enhancement.

If considered convenient a region/zone can involve a combination of raised elements and recessed locations.

In a preferred formation the raised elements and/or recessed regions are arranged as regular arrays.

In a particular construction the elements have generally cylindrically shaped bodies and a domed free ends.

Conveniently, the said regions/zones of the footwear are covered with a layer or panel of a material presenting an array of said raised elements which layer or panel conforms to the form of the article of footwear at the location of mounting to the article of footwear.

For a better understanding of the invention and to show how to carry the same into effect reference will now be made to the accompanying drawings in which:

Figure 1 is a very very highly schematic side view representation of an article of footwear which is conveniently represented by a football boot, the Figure illustrating the inside of the right boot incorporating the proposals of the invention;

Figure 2 is a very very highly schematic side view representation of an article of footwear which is conveniently represented by a football boot the Figure illustrating the inside of the left boot incorporating the proposals of the invention;

Figure 3 is a plan view of the boot shown in Figure 1 or 2; and

Figure 4 is a more detailed illustration of a particular football boot incorporating the features of the invention.

Referring to the drawings and particularly to Figures 1 to 3, the boot very schematically shown therein is basically representative of the essentials of a conventional football boot construction and form in that it incorporating a sole platform 1 provided with playing field grip enhancing studs 2 and uppers 3 with lace receiving eyelets 4.

In accordance with the proposals of the invention one or more regions/zones of the boot i.e., the toe region 5, the front instep region 6 and/or the front outside side region 7 of the boot uppers 3 incorporates at each such region/zone outwardly projecting i.e., raised elements 8 such as pips, dots, or the like.

The elements 8 can be arranged in random fashion as is very schematically indicated at 9 (Figure 3) or in regular lines/arrays as is very schematically indicated at 10 (Figure 10)

In practice, the provision of the regions/zones 5,6,and 7 of projecting elements produces an overall surface effect such that when the any of these regions/zones strikes a ball in such manner that there is relative displacement between the region/zone surface and the ball at an angle to the impact direction between the ball and boot, the interaction between the region/zone 5,6 or 7 actually involved in the impact contact with the ball forms an area at which frictional interaction during the contact is enhanced produces a drag effect which, in practice, is usually sufficient to induce a degree of spin or twist into the subsequent movement of the ball. In other words the ball is caused to swerve during its flight. By controlling the extent of such relative displacement and the angular relationships the nature of the swerve effect produced can be controlled.

Furthermore, when the boot with such regions/zones is used to block or otherwise impede the movement of a ball the interaction between the ball and a said region/zone is such as to produce increased grip i.e., drag effect which affords a player with the facility of being able to exercise a greater control over the subsequent movements of the ball thereby effectively enhancing ball control and the guiding of the subsequent desired movement of the ball.

Conveniently, each said region/zone is such that the reaction between a said region/zone and a ball on impact between the ball and the region/zone is such as to facilitate the production of a relative movement between boot and ball which is such as to cause the ball to follow a curved trajectory.

It will be apparent that the provision of each said region/zone is such that the boot is arranged effectively to produce additional grip between the ball contacting surface at the region/zone and the ball whereby any relative displacement between the ball and boot surface whilst contact is occurring therebetween facilitates the imparting of spin to the ball.

The above discussed regions/zones can be conveniently or preferably applied to the boot during the original manufacture or subsequently added.

Thus the regions/zones can be provided by attaching a panel of a material comprising a backing layer which is to be secured by suitable adhesive, stitching etc., to the surface of the boot upper at a desired location at which it is required to locate the friction enhancing region/zone the backing layer carrying an arrangement of dots, pimples, or other small projections projecting from the base layer or recessed regions in the layer.

Preferably, a said predetermined zone/region of an article of footwear such as a boot incorporates a plurality of raised elements, pips, dots, or otherwise raised or roughened surface characteristics.

Conveniently, the regions/zones can include plurality of recessed locations such as recesses, grooves, hollows or the like arranged such that the open ends of the recesses grooves, hollows or the like provide the friction enhancement.

If considered convenient a region/zone can involve a combination of raised elements and recessed locations.

In a preferred formation the raised elements and/or recessed regions are arranged as regular arrays.

It is convenient to provide an array of domed elements.

Conveniently, the said regions of the footwear are covered with a layer of material presenting an array of said raised elements.

Whilst the forgoing description has been concerned with discrete regions/zones with the raised elements etc., it will be appreciated that, if desired, the total surface of the uppers of the article of footwear could be covered by the raised elements.

The dots, pips, or other such raised elements may be formed from a composite plastics material such one having a backing or substrate comprising Nylon Polyester which substrate is covered with PVC dots or the like.

It will be understood that the materials used would be chosen having regard to the need to be able to withstand wear and also be sufficiently flexible to be able to deflect with respect to the boot itself during relative displacement between the elements and the ball.

In addition, it is necessary that they are not sufficiently rigid as to form a spike like hazard to any player who may struck during play.

It should be noted that whilst the Figures have illustrated a construction incorporating the raised elements extending over both the toe cap and other regions of the boot it should be appreciated that, if desired, the raised elements can be located at a single location such as the inside or outside of the side forming regions of the boot or, for example, on the toe cap. This single region/zone arrangement is shown in Figure 4. The boot shown in

Figure 4 is representative of present day boot formations and in so far as the present Application is concerned the detailed construction of the boot does not require discussion in this specification. In relation to Figure 4 the friction enhancing region/zone is shown at 11. As will be noted the raised elements are

arranged as a regular array of raised elements 8.

In practice, the particular location of the raised elements would be related to the particular operational effect it is desired to enable a user of the boot to achieve when wearing the boot.

It should additionally be appreciated that the raised elements can be provided as separate smaller groups of elements rather than extended areas such as indicated in the schematic drawings.

Also the elements may be randomly distributed within an area or in regularly arranged rectilinear or curved rows and columns of elements.

The elements may be made from a thermoplastic exhibiting a hardness of, for example, 40-45 degrees Shore. Other hardness values can be adopted as required.

Also vulcanised rubber can be used.

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Claims of corresponding document: **GB2259639**

CLAIMS

1. A method of enhancing friction between an article of footwear and a ball, characterised by the step of applying to or producing on the article of footwear at least one region/zone of enhanced friction capability.
2. An article of footwear characterised by having at least one region/zone (5,6,7) at which frictional interaction during contact between a ball and a said region/zone is enhanced.
3. An article of footwear as claimed in claim 2, and characterised in that a said region/zone is produced during the original manufacture of the article of footwear.
4. An article of footwear as claimed in claim 2, and characterised in that a said region/zone is produced on or applied to the region/zone after its initial manufacture.
5. An article of footwear as claimed in claim 2,3 or 4, and characterised in that each said region/zone is such that the reaction between a said zone and a ball on impact between the ball and the zone is such as to facilitate the production of a relative movement between the article of footwear and ball which is such as to cause the ball to follow a desired linear/curved trajectory.
6. An article of footwear as claimed in claim 2 or 3, and characterised in that each said region/zone is such that the surface of the article of footwear is arranged to produce additional grip between the ball and the ball contacting surface at the region/zone whereby any relative displacement between the ball and article of footwear surface whilst contact is occurring therebetween facilitates the impartation of spin to the ball.

7. An article of footwear as claimed in claim 2, 3 or 4, and characterised in that a said predetermined zone/region of incorporates a plurality of raised elements, pips, dots, or otherwise raised or roughened surface characteristics.
8. An article of footwear as claimed in claim 2,3 or 4 and characterised in that the zones or regions includes plurality of recessed locations.
9. An article of footwear as claimed in claim 2,3 or 4, and characterised in that a region/zone can involve a combination of raised elements and recessed locations.
10. An article of footwear as claimed in claimd or 9, and characterised in that the recessed locations include a plurality of individual cavities, grooves, hollows or recesses arranged such that the open ends of the cavities, grooves, hollows or recesses provide the friction enhancement.
11. An article of footwear as claimed in claim 9 or 10, and characterised in that the raised elements and/or recessed locations are arranged as regular arrays (10).
12. An article of footwear as claimed in claim 9,10 or 11, andçcharacterised in that at least one zone includes an array of domed elements.
13. An article of footwear as claimed in claim 9 or 10, and characterised in that the raised elements (8) and/or recessed locations are arranged in random fashion (9).
- 14.- An article of footwear as claimed in any one of claims 2 to 13, and characterised in that said regions/zones are covered with a layer of material presenting an array of said raised elements.
15. An article of footwear as claimed in any one of claims 2 to 14, and characterised in that a panel of a material comprising a backing layer secured by suitable adhesive, stitching etc., to the surface of the article of footwear at a desired location at which it is required to locate the friction enhancing region/zone is provided on its outer surface with an arrangement of raised elements (8).

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